Amendments To The Claims:

Please amend the claims as shown.

1 – 21 (canceled)

22. (new) A method for recording microstructural changes in a layer system component, comprising:

measuring a material parameter of the component a plurality of times,

wherein the material parameter is selected from the group consisting of: electrical capacitance, thermal conductivity, specific heat capacity, peltier coefficient, magnetic susceptibility, ferroelectricity, pyroelectricity, ultrasound or mechanical indenter test.

23. (new) The method as claimed in claim 22, wherein the first of the plurality of material parameter measurements is performed on a new component or before the first operational use of the component.

24. (new) The method as claimed in claim 23, wherein a subsequent material parameter measurement is performed at a time interval after the first measurement and after or during the first operational use.

25. (new) The method as claimed in claim 22, wherein the material parameter is measured by a nondestructive measurement method.

26. (new) The method as claimed in claim 22, wherein the component comprises a substrate and a layer.

27. (new) The method as claimed in claim 26, wherein the component comprises a substrate, a first layer and an outer layer.

28. (new) The method as claimed in claim 26, wherein the material parameter measurement method is used to examine microstructural changes in the substrate or the layer of the component which are caused by:

a change in a precipitation of the substrate or the layer material, or

cracks in the substrate or layer.

29. (new) The method as claimed in claim 26, wherein the substrate or the layer is an alloy and the material parameter measurement method is used to examine microstructural changes in the substrate or the layer caused by depletion of an alloying element.

30. (new) The method as claimed in claim 29, wherein the layer is a porous ceramic layer.

31. (new) The method as claimed in claim 30, wherein the material parameter measurement method is used to examine microstructural changes in the substrate or the layer, which are caused by a phase change in the substrate or the layer material.

32. (new) The method as claimed in claim 31, wherein a thermal conductivity of the substrate or the layer is determined by a laser flash method or by a thermal wave analysis.

33. (new) The method as claimed in claim 26, wherein the material parameter of the substrate is determined with the layer present arranged on the substrate.

34. (new) The method as claimed in claim 32, wherein a material parameter of the combined substrate and layer is determined.

35. (new) The method as claimed in claim 29, wherein the component substrate is an iron-base, cobalt-base or nickel-base superalloy.

36. (new) The method as claimed in claim 31, wherein the layer is an MCrAlX layer where M stands for at least one element selected from the group consisting of iron, cobalt or nickel and X stands for yttrium, silicon or at least one rare earth element.

37. (new) The method as claimed in claim 22, wherein the component is a turbine blade, vane or a lining of a combustion chamber.

38. (new) The method as claimed in claim 22, wherein the material parameter measurement is performed on line.

39. (new) The method as claimed in claim 22, wherein a time period is determined where the component is to be inspected, refurbished or replaced once a predefined percentage change in the material parameter is exceeded.

40. (new) The method as claimed in claim 39, wherein the component is a component of an apparatus, and the material parameter is measured while the component is installed in the apparatus.

41. (new) A method for recording microstructural changes in a turbine component, comprising:

providing a turbine component having a layer system where the layer system is a turbine component having:

a super alloy substrate,

a bond coat arranged on the substrate, and

an MCrAlX layer where M stands for at least one element selected from the group consisting of iron, cobalt or nickel and X stands for yttrium, silicon or at least one rare earth element;

measuring a material parameter of the component a first time, the material parameter selected from the group consisting of: electrical capacitance, thermal conductivity, specific heat capacity, peltier coefficient, magnetic susceptibility, ferroelectricity, pyroelectricity, ultrasound or mechanical indenter test;

recording the first measured parameter on a recording device; and

re-measuring the material parameter of the component a second time after the component has been operated in the turbine.